Flow cytometry aids basic cell biology research and drug discovery

April 3, 2012

Examining cells has never been clearer with LANL's use of acoustic waves

Flow cytometry dates back to a cell sorter built by Mack Fulwyler at Los Alamos in 1965. Several additional contributions to the technology have been made at the National Flow Cytometry Resource of Los Alamos National Laboratory (LANL). Flow cytometry

allows scientists to quantify and examine cells by passing them through a laser-based detection device. Cell biologists use flow cytometry for a wide range of applications, including the study of cellular protein expression, immunophenotyping, quantifying cellular DNA, and measurement of a variety of cellular phenotypes for the purposes of basic cell biology research and drug discovery.

LANL's most recent contribution to the technology is the use of acoustic waves to precisely control the movement of cells in a sample, vastly improving the sensitivity, throughput and accuracy of flow cytometry-based assays. In order to achieve commercial deployment, in 2006 former LANL researchers founded Acoustic Cytometry Systems (ACS) and exclusively licensed the technology. The ACS team secured seed funding and extended the LANL technology to a commercial prototype stage. Subsequently, in 2008, ACS was acquired by Life Technologies, a leader in the biotechnology industry.

In December 2009, Life Technologies Corporation announced the release of the Attune® Acoustic Focusing Cytometer, a first-of-its-kind cytometer system based on technology developed at Los Alamos National Laboratory (LANL).

The Attune® Acoustic Focusing Cytometer features a reduced footprint, reduced consumables and an affordable price to make the instrument available to researchers and laboratories worldwide.